**Physical Science Isotopes Worksheet**

1. What is an isotope? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. What does the number next to isotopes signify? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. How can you tell isotopes apart? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

For each of the following isotopes, write the number of protons, neutrons, and electrons.

|  |  |  |
| --- | --- | --- |
|  | Carbon-12 | Carbon-16 |
| # of protons |  |  |
| # of neutrons |  |  |
| # of electrons |  |  |

|  |  |  |
| --- | --- | --- |
|  | Chromium-58 | Chromium-63 |
| # of protons |  |  |
| # of neutrons |  |  |
| # of electrons |  |  |

|  |  |  |
| --- | --- | --- |
|  | Nitrogen-15 | Nitrogen-20 |
| # of protons |  |  |
| # of neutrons |  |  |
| # of electrons |  |  |

|  |  |  |
| --- | --- | --- |
|  | Sulfur-23 | Sulfur-25 |
| # of protons |  |  |
| # of neutrons |  |  |
| # of electrons |  |  |

|  |  |  |
| --- | --- | --- |
|  | Selenium-30 | Selenium-35 |
| # of protons |  |  |
| # of neutrons |  |  |
| # of electrons |  |  |

|  |  |  |
| --- | --- | --- |
|  | Sodium-12 | Sodium-20 |
| # of protons |  |  |
| # of neutrons |  |  |
| # of electrons |  |  |

Fill in the isotope names and any missing information, including isotope numbers from the chart. Use your periodic table and the information provided.

|  |  |  |
| --- | --- | --- |
|  |  |  |
| # of protons | 25 |  |
| # of neutrons | 17 | 15 |
| # of electrons |  |  |

|  |  |  |
| --- | --- | --- |
|  |  |  |
| # of protons | 32 |  |
| # of neutrons | 30 | 32 |
| # of electrons |  |  |

|  |  |  |
| --- | --- | --- |
|  |  |  |
| # of protons |  |  |
| # of neutrons | 48 | 51 |
| # of electrons |  | 46 |

|  |  |  |
| --- | --- | --- |
|  |  |  |
| # of protons |  |  |
| # of neutrons | 113 | 111 |
| # of electrons | 55 |  |

|  |  |  |
| --- | --- | --- |
|  | Iron- | Iron- |
| # of protons |  |  |
| # of neutrons | 27 | 30 |
| # of electrons |  |  |

|  |  |  |
| --- | --- | --- |
|  | Iodine- | Iodine- |
| # of protons |  |  |
| # of neutrons | 32 | 35 |
| # of electrons |  |  |

|  |  |  |
| --- | --- | --- |
|  | Germanium- | Germanium- |
| # of protons |  |  |
| # of neutrons | 33 | 36 |
| # of electrons |  |  |

|  |  |  |
| --- | --- | --- |
|  | -10 | -12 |
| # of protons |  | 6 |
| # of neutrons |  |  |
| # of electrons | 6 |  |

|  |  |  |
| --- | --- | --- |
|  | -54 | -56 |
| # of protons | 24 |  |
| # of neutrons |  |  |
| # of electrons |  |  |

|  |  |  |
| --- | --- | --- |
|  | -22 | -25 |
| # of protons |  |  |
| # of neutrons |  |  |
| # of electrons | 11 |  |